This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims:

1. (Currently Amended) A method of treating cancer, wherein said cancer is prostate cancer, colon cancer, breast cancer, pancreatic cancer or lung cancer, comprising administering a G1 and/or S phase checkpoint activator to a subject in need thereof, wherein said checkpoint activator:

a) is an compound with a molecular weight of less than 5 kD;

b) does not damage DNA and does not stabilize microtubules; and

c) is administered such that ~~in a dosage effective manner, wherein said dosage is determined by measuring the unscheduled~~ expression of a member of the E2F family of transcription factors, selected from the group consisting of E2F-1, E2F-2 and E2F-3, is elevated ~~and wherein said dosage is sufficient~~ to selectively activate a checkpoint in cancerous cells, but ~~not affect the cytotoxicity or viability of~~ wherein said checkpoint activator is not toxic to and does not effect the viability of non-cancerous cells in said subject;

wherein said checkpoint activator is not β-lapachone.

2-3. (Cancelled)

4. (Previously Presented) The method of claim 1, wherein said checkpoint activator inhibits cellular proliferation.

5. (Previously Presented) The method of claim 1, wherein said checkpoint activator induces apoptosis.

6-8. (Cancelled)

9. (Previously Presented) The method of claim 1, wherein said checkpoint activator is selected from the group consisting of 3,4-dihydro-2,2-dimethyl-3-(3-methyl-2-butenyl)-2H-

naphtho[1,2-b]pyran-5,6-dione, 3,4-dihydro-2,2-dimethyl-2H-naphtho[1,2-b]thiopyran-5,6-dione and 3,4-dihydro-4,4-dimethyl-2H-naphtho[1,2-b]thiopyran-5,6-dione.

10. (Previously Presented) The method of claim 1, wherein said subject is human.

11. (Previously Presented) The method of claim 1, wherein said checkpoint activator is administered parenterally.

12. (Previously Presented) The method of claim 1, wherein said checkpoint activator is administered intravenously.

13. (Previously Presented) The method of claim 1, wherein said checkpoint activator is administered orally.

14. (Previously Presented) The method of claim 1, wherein said checkpoint activator is administered topically.

15. (Previously Presented) The method of claim 1, wherein said checkpoint activator is administered in combination with a chemotherapeutic agent.

16. (Previously Presented) The method of claim 15, wherein said chemotherapeutic agent is selected from the group consisting of microtubule targeting drugs, topoisomerase poison drugs and cytidine analogue drugs.

17. (Previously Presented) The method of claim 15, wherein said chemotherapeutic agent is selected from the group consisting of paclitaxel, lovastatin, mimosine, tamoxifen, gemcitabine, araC, 5-fluorouracil (5-FU), methotrexate (MTX), docetaxel, vincristin, vinblastin, nocodazole, teniposide, etoposide, adriamycin, epothilone, navelbine, camptothecin, daunonibicin, dactinomycin, mitoxantrone, amsacrine, epirubicin and idarubicin.

18-34. (Cancelled)

35. (Currently Amended) A method of treating cancer, wherein said cancer is prostate cancer, colon cancer, breast cancer, pancreatic cancer or lung cancer, comprising administering a G1 and/or S phase checkpoint activator to a subject in need thereof, wherein said checkpoint activator:

a) is an compound with a molecular weight of less than 5 kD;

b) does not damage DNA and does not stabilize microtubules; and

c) is administered such that ~~in a dosage effective manner, wherein said dosage is determined by measuring the unscheduled~~ expression of a member of the E2F family of transcription factors, selected from the group consisting of E2F-1, E2F-2 and E2F-3, is elevated ~~and wherein said dosage is sufficient~~ to selectively activate a checkpoint in cancerous cells, but ~~not affect the cytotoxicity or viability of~~ wherein said checkpoint activator is not toxic to and does not effect the viability of non-cancerous cells in said subject;

wherein said checkpoint activator is not β-lapachone.

36-37. (Cancelled)

38. (Previously Presented) The method of claim 35, wherein said checkpoint activator inhibits cellular proliferation.

39. (Previously Presented) The method of claim 35, wherein said checkpoint activator induces apoptosis.

40-42. (Cancelled).

43. (Previously Presented) The method of claim 35, wherein said checkpoint activator is selected from the group consisting of consisting of 3,4-dihydro-2,2-dimethyl-3-(3-methyl-2-butenyl)-2H-naphtho[1,2-b]pyran-5,6-dione, 3,4-dihydro-2,2-dimethyl-2H-naphtho[1,2-b]thiopyran-5,6-dione and 3,4-dihydro-4,4-dimethyl-2H-naphtho[1,2-b]thiopyran-5,6-dione.

44. (Previously Presented) The method of claim 35, wherein said subject is human.

45. (Previously Presented) The method of claim 35, wherein said checkpoint activator is administered parenterally.

46. (Previously Presented) The method of claim 35, wherein said checkpoint activator is administered intravenously.

47. (Previously Presented) The method of claim 35, wherein said checkpoint activator is administered orally.

48. (Previously Presented) The method of claim 35, wherein said checkpoint activator is administered topically.

49. (Previously Presented) The method of claim 35, wherein said checkpoint activator is administered in combination with a chemotherapeutic agent

50. (Previously Presented) The method of claim 49, wherein said chemotherapeutic agent is selected from the group consisting of microtubule targeting drugs, topoisomerase poison drugs and cytidine analogue drugs.

51. (Previously Presented) The method of claim 49, wherein said chemotherapeutic agent is selected from the group consisting of paclitaxel, lovastatin, mimosine, tamoxifen, gemcitabine, araC, 5-fluorouracil (5-FU), methotrexate (MTX), docetaxel, vincristin, vinblastin, nocodazole, teniposide, etoposide, adriamycin, epothilone, navelbine, camptothecin, daunonibicin, dactinomycin, mitoxantrone, amsacrine, epirubicin and idarubicin.

52. (Cancelled)

53. (Currently Amended) A method of inducing apoptosis of cancer cells in a subject, wherein said cancer is prostate cancer, colon cancer, breast cancer, pancreatic cancer or lung

cancer, comprising administering a checkpoint activator to subject in need thereof, wherein said checkpoint activator:

a) does not damage DNA and does not stabilize microtubules; and

b) is administered such that ~~in a therapeutically effective amount to activate~~ a checkpoint is activated and ~~induce~~ apoptosis is induced in ~~of said~~ cancer cells but wherein the checkpoint activator is not toxic to and does not affect the ~~cytotoxicity or~~ viability of non-cancerous cells in said subject,

wherein said checkpoint activator is not β-lapachone.

54. (Cancelled)

55. (Withdrawn) A method for screening for a cell cycle checkpoint activation modulator, comprising

a) contacting a cancer cell with a candidate compound, and

b) measuring the degree (or extent) of elevation of a member of the E2F family of transcription factors, selected from the group consisting of E2F-1, E2F-2 and E2F-3, if present, wherein an increase in an E2F family member in the presence of said compound, as compared to the absence of the compound, indicates that the compound is an inducer of apoptosis.

56. (Withdrawn) A cell cycle checkpoint activation modulator identified by the method of claim 55.

57. (Withdrawn) A method of treating cancer, comprising administering a modulator of cell cycle checkpoint activation identified by the method of claim 55 to a subject in need thereof, wherein said cell cycle checkpoint activation modulator treats said cancer.

58. (Withdrawn) A method for screening for a cell cycle checkpoint activation modulator, comprising

a) contacting a cancer cell with a candidate compound, and

b) measuring the degree (or extent) of elevation of the transcription factor E2F-1, if present, wherein an increase in E2F-1 in the presence of said compound, as compared to the absence of the compound, indicates that the compound is an inducer of apoptosis

59. (Withdrawn) A cell cycle checkpoint activation modulator identified by the method of claim 58.

60. (Withdrawn) A method of treating cancer, comprising administering a modulator of cell cycle checkpoint activation identified by the method of claim 58 to a subject in need thereof, wherein said cell cycle checkpoint activation modulator treats said cancer.

61. (Withdrawn) A method for screening for a cell cycle checkpoint activation modulator, comprising

a) contacting a cell with a candidate compound, and

b) measuring the degree (or extent) of apoptosis, if present, wherein an increase in apoptosis in the presence of said compound, as compared to the absence of the compound, indicates that the compound is an inducer of apoptosis.

62. (Withdrawn) A cell cycle checkpoint activation modulator identified by the method of claim 61.

63. (Withdrawn) A method of treating cancer, comprising administering a modulator of cell cycle checkpoint activation identified by the method of claim 61 to a subject in need thereof, wherein said cell cycle checkpoint activation modulator treats said cancer.

64. (Withdrawn) A method for screening for a compound effective for treating cancer, comprising

a) contacting a cancer cell with a candidate compound, and

b) measuring the degree (or extent) of elevation of a member of the E2F family of transcription factors, selected from the group consisting of E2F-1, E2F-2 and E2F-3, if present, wherein an increase in an E2F family member in the presence of said compound, as compared to the absence of the compound, indicates that the compound is an inducer of apoptosis.

65. (Withdrawn) A compound effective for treating cancer identified by the method of claim

66. (Withdrawn) A method of treating cancer, comprising administering a modulator of cell cycle checkpoint activation identified by the method of claim 64 to a subject in need thereof, wherein said cell cycle checkpoint activation modulator treats said cancer.

67. (Withdrawn) A method for screening for compound effective for treating cancer, comprising

a) contacting a cancer cell with a candidate compound, and

b) measuring the degree (or extent) of elevation of the transcription factor E2F-1, if present, wherein an increase in E2F-1 in the presence of said compound, as compared to the absence of the compound, indicates that the compound is an inducer of apoptosis

68. (Withdrawn) A compound effective for treating cancer identified by the method of claim

69. (Withdrawn) A method of treating cancer, comprising administering a modulator of cell cycle checkpoint activation identified by the method of claim 67 to a subject in need thereof, wherein said cell cycle checkpoint activation modulator treats said cancer.

70. (Withdrawn) A method for screening for a compound effective for treating cancer, comprising

c) contacting a cell with a candidate compound, and

d) measuring the degree (or extent) of apoptosis, if present, wherein an increase in apoptosis in the presence of said compound, as compared to the absence of the compound, indicates that the compound is an inducer of apoptosis.

71. (Withdrawn) A compound effective for treating cancer identified by the method of claim

72. (Withdrawn) A method of treating cancer, comprising administering a modulator of cell cycle checkpoint activation identified by the method of claim 70 to a subject in need thereof, wherein said cell cycle checkpoint activation modulator treats said cancer.

73. (Previously Presented) The method of claim 1, wherein said compound is an orthonapthoquinone.

74. (Previously Presented) The method of claim 35, wherein said compound is an orthonapthoquinone.